

3.1 Imperial and Metric System Review Notes

Part 1 Converting between Imperial Measurements

5' to yards

7.416 ft to yards

$$\frac{12 \text{ in}}{1 \text{ ft}} = \frac{5 \text{ in}}{x}$$

$$\frac{1 \text{ yd}}{3 \text{ ft}} = \frac{x}{7.416}$$

$$x = 5 \times 1 \div 12 = 0.41\bar{6}$$

$$x = 7.416 \div 3 = 2.47 \text{ yd}$$

Part 2 Converting between Metric Units (SI)

The Metric System uses the number 10 as its base. This makes converting easier as all you have to do is multiply or divide by some multiple of 10.

Units of Length in the Metric System						
Kilometer (km)	Hectometer (hm)	Decametre (dam)	Metre (m)	Decimetre (dm)	Centimetre (cm)	Millimetre (mm)

5 mm to m

10 km to cm

$$5 \text{ mm} \div 1000 = 0.005 \text{ m}$$

$$10 \text{ km} = 10,000,000 \text{ cm}$$

$$10 \text{ km} = 1,000,000 \text{ m}$$

Part 3 Converting between Imperial and Metric (SI) Units

To convert between systems, use a proportion.

- 7 yards to metres

$$\frac{0.9144 \text{ m}}{1 \text{ yd}} = \frac{x}{7 \text{ yd}}$$

$$x = 7 \times 0.9144 = 6.40 \text{ m}$$

Show you know

5 cm to inches

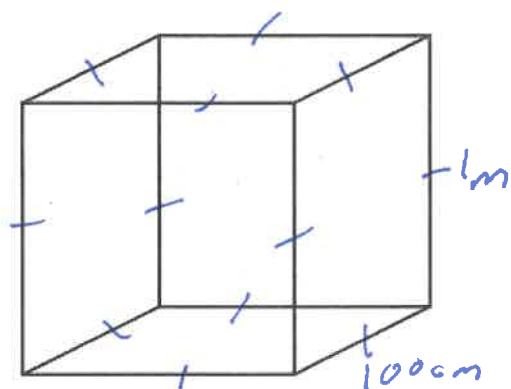
$$\frac{2.54 \text{ cm}}{1.4} = \frac{5 \text{ cm}}{x} \quad x = 1.97$$

16 m to feet

$$\frac{1 \text{ ft}}{0.3048 \text{ m}} = \frac{x}{16 \text{ m}} \quad x = 52.49 \text{ m}$$

Part 4 Converting between Linear, Square and Cubic Units

The conversion between a linear length and an area measurement or even volumetric measurement **is not** as easy as dividing or multiplying by 12" or 10 in the metric system.



$$V = S^3$$
$$V = 1^3$$
$$V = 1$$

C mm
 $V = 100^3$
 $V = 1,000,000$

$$1 \text{ ft}^3 = 12^3$$

$$1\text{ m} = 100\text{ cm}$$

Examples

$$3 \text{ ft}^3 \text{ to in}^3$$

$$\frac{1 \text{ ft}^3}{12^3 \text{ in}^3} = \frac{1 \text{ ft}^3}{1728 \text{ in}^3} = \frac{3 \text{ ft}^3}{x}$$

$$x = 5184 \text{ in}^3$$